ACC NR: AP7004264 (A) SOURCE CODE: UR/0432/66/000/003/0019/0023

AUTHOR: Kan, Ya. S. (Candidate of physico-mathematical sciences); Mikhaylov, O. S. (Candidate of technical sciences); Rakhubovskiy, V. A.

ORG: none

TITLE: A model of a cryotron digital computer with programmed control

SOURCE: Mekhanizatsiya i avtomatizatsiya upravleniya, no. 3, 1966, 19-23

TOPIC TAGS: cryogenic computer, computer design

ABSTRACT: A small-scale model of a cryotron computer was built and tested at the Physico-technical Institute of the Academy of Sciences UkrSSR. The model contained only essential blocks such as the arithmetic unit, number memory unit, instruction memory with machine halt unit, control unit, and an I/O unit. The model could add, subtract, and multiply 4-bit (including sign bit) words in fixed-point notation. Instructions were of the three-address type, and the memory unit was random-access. The computer was built using 504 lead-tin wire cryotrons mounted on micarta cards. Three tests lasting 11, 17, and 21 hours were made during which every 3 hours the machine was stopped

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ACC NR: AP7004264

while liquid helium was added. No malfunctions were encountered. Certain simple algorithms were tried out using eight 9-bit instructions. It was established that multiplication required 3 sec and subtraction 5 sec of machine time; clock period was therefore made equal to 6 sec. The authors state that the test conditions were not optimal in the sense of maximum speed, and propose certain modifications which would bring the computing speed into the megacycle clock-frequency range. Orig. art. has: 2 figures. [WA-81] [BD]

SUB CODE: 09/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 001

Card 2/2 UDC: 681.142.6:537.312.62

MIKHAYLOV, G.V.

Mashiny I Oborudovaniye Pererabatyvayu-shchikh Predpriyatiy Rybnoy Promyshlennost.
(Machines and Equipment of The Processing Enterprises of the Fish Industry)
Moskva, Pishchepromizdat, 1951.
491 P.
"Literatura": P. 487-(488)
SO: N/5
741.94
.M6

MIKHAYLOV, Georgiy Vasil'yevich; MEL'NIK, M.K., redaktor; KUZ'MINA, V.S., redaktor; GOTLIB, E.M., tekhnicheskiy redaktor.

[Technological equipment of fish processing plants] Tekhnologicheskoe oborudovanie ryboobrabatyvaiushchikh predpriiatii. Moskva, Pishchepromizdat, 1955. 310 p. [MLRA 9:1]
(Fisheries) (Canning and preserving)

ZAYTSEV, Vikentiy Petrovich; MIKHAYLOV, G.V., retsenzent; PAKHOMOV, A.I. retsenzent; PISKAREV, A.I., spetsredaktor; MOROZOVA, I.I., redaktor; CHEBYSHEVA, Ye.A., tekhnicheskiy redaktor

[Refrigeration of fishery products] Kholodil'noe konservirovanie rybnykh produktov. Moskva, Pishchepromizdat, 1956. 339 p. (MLRA 10:4)
(Fishery products--Preservation)
(Refrigeration and refrigerating machinery)

KORSUN, G.S., polkovnik meditsinskoy sluzhby; MIKHAYLOV, G.V., podpolkovnik meditsinskoy sluzhby

Some problems in the clinical and physiological rating of radar operators. Voen.-med.zhur. no.9:32-36 S '56. (MIRA 10:3)
(ELECTRICITY--PHYSIOLOGICAL EFFECT)
(RADAR--HYGIENIC ASPECTS)

PRIKHOT'KO, A F

20(7) PHASE I BOOK EXPLOITATION SOV/1365

L'vov. Universytet

Materialy I Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Fizychnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Yazer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Landsberg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Milyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

Card 1/30

Card 15/30

24(4)
AUTHOR: Mikhaylov, G. V. SOV/56-36-5-8/76

TITLE: The Influence of Pressure and Temperature on the Raman Spectrum of Nitrogen (Vliyaniye davleniya i temperatury na spektr kombinatsionnogo rasseyaniya azota)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 5, pp 1368-1373 (USSR)

ABSTRACT: The aim of the present paper was the experimental investigation of the widening of lines in the Raman spectrum and of the rotational structure of the Q branch in the vibrational band of the spectrum in nitrogen. The investigations of the Raman spectrum in gases at various pressures and at constant temperature were carried out by means of a high-pressure illumination device which is schematically represented by figure 1. Work was carried out in collaboration with the Institut fiziki vysokikh davleniy Akademii nauk SSSR (Institute of the Physics of High Pressures of the Academy of Sciences USSR). The device is described by the present paper. Excitation of

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the Raman lines was carried out by means of the Hg-lines 4047 and 4358 Å, and they were recorded by means of the spectrograph HUET B-III with a linear dispersion of 22.7 cm^{-1}/mm (at 4047 Å) and 36.2 cm^{-1}/mm (at 4358 Å). Exposure of the Raman-orthe Agfa plates lasted from 3 to 40 hours (in the thermostat). The pictures were treated by means of the microphotometer MF-4. The Raman spectra of nitrogen gas consisted of O-and S-branches in the rotational band and a Q branch in the vibrational band. The spectra were investigated at 27°C within the range of from 7 - 114 atmospheres absolute pressure. The results obtained for 4 different pressures are shown by figure 2; table 1 shows the dependence of line width on pressure, and the same is shown by figure 3 in form of a diagram for the rotational and the vibrational lines. For the former the curve shows a steep incline with increasing pressure up to about 25 atm, after which the incline becomes less steep; the latter show a hardly noticeable linear incline with increasing pressure. The results obtained are discussed in detail. For the pressure

dependence of the widths of lines the formula $\delta = 2\pi N\bar{v}\rho^2$ holds. (N = number of molecules/cm^3, $\bar{v}$ = average velocity of molecules); for nitrogen $\delta = 0.027\,\rho^2 p$ holds at 27°. Table 2 shows the computed and measured values of the impact broadening of the vibrational and rotational lines for various temperatures, figure 4 shows in form of a diagram the rotational structure of the Q branch of nitrogen at 300°C. For the Q branch of the vibrational band $\rho_\nu = 0.43$ Å, and for the pure rotational band $\rho_\omega = 3.9$ Å was found.

The results obtained agree satisfactorily with the theory. The author finally thanks Academician G. S. Landsberg, under whose supervision the first part of this work was carried out, and Professor P. A. Bazhulin and I. I. Sobel'man for advice and discussions; he further thanks the collaborators of the Institute for the Physics of High Pressures, Professor L. F. Vereshchagin, Ye. F. Shcherbakova and I. Ye. Surkov for their assistance. There are 3 figures, 2 tables, and 8 references, 5 of which are Soviet.

The Influence of Pressure and Temperature on the Raman Spectrum of Nitrogen

SOV/56-36-5-8/76

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: December 7, 1958

Card 4/4

24(7),24.5000

76970
SOV/56-37-6-10/55

AUTHOR: Mikhaylov, G. V.

TITLE: Effect of Pressure on the Combinational Spectrum of Oxygen

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 6, pp 1570-1574 (USSR)

ABSTRACT: A study was made of the Raman spectrum of oxygen at pressures between 7 and 125 atm. The Q-branch of the vibrational band O_2($\Delta \nu$ = 4,358 A) at 15-125 atm and the rotational band appeared as shown in Figs. 3 and 4, respectively.

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Effect of Pressure on the Combinational Spectrum of Oxygen

76970
SOV/56-37-6-10/55

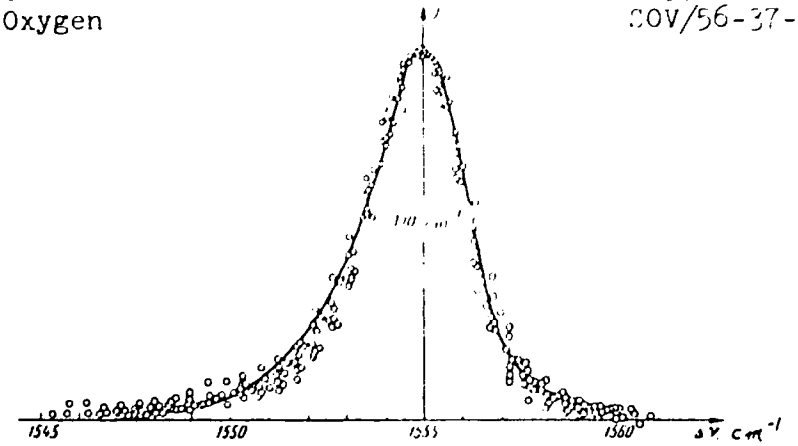

Fig. 3. Q-branch of the vibrational band of combinational dispersion of O_2 ($\Delta\nu$ = 4,358 A) at 15 to 125 atm.

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Effect of Pressure on the Combinational Spectrum of Oxygen

76970
SOV/56-37-6-19/5

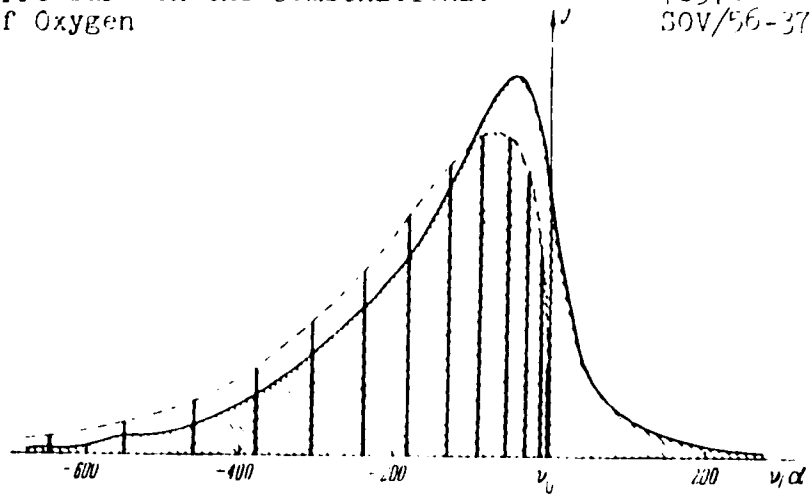

Fig. 4. Rotational structure and calculated form of the Q-branch O_2.

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Effect of Pressure on the Combinational Spectrum of Oxygen

76970
SOV/56-37-6-10/55

At these pressures the broadening of lines in the rotational band bore the nature of collisions. The effective collision broadening parameter was $\rho_\omega = 4.43$ A. The parameters characterizing the width of the rotational lines in the Raman spectrum were identical to those for O_2 as measured on the basis of absorption in the microwave region. Differing from the lines of the rotational band, the Q-branch of the vibrational transition of O_2 did not broaden with the increase in the pressure. The observed width of the Q-branch was explained on the basis of the splitting of the Q-branch with respect to J, the splitting being due to the interaction between vibrations and rotations. This work was carried out under the guidance of P. A. Bazhulin; I. I. Sobel'man, V. I. Malyshev, and S. G. Rautian participated in the discussion of this work. The text contains 1 table; 4 graphs; and 7 references, 5 Soviet, 2 U.S. The U.S. references are: (1) P. W. Anderson, Phys. Rev., 76, 647, 1949; (2) R. S. Anderson,

Card 4/5

Effect of Pressure on the Combinational Spectrum of Oxygen

76970
SOV/56-37-6-10/55

W. V. Smith, W. Gordy, Phys. Rev., 87, 561, 1952.

ASSOCIATION: P. N. Lebedev Phys. Inst. Acad. Sciences USSR, USSR (Fizicheskiy institut imeni P. N. Lebedev Akademii nauk SSSR, SSSR)

SUBMITTED: July 9, 1959

Card 5/5

MIKHAYLOV, G.V.

Raman effect in methane at pressures of 15 to 250 atm. Opt.i spektr. 12 no.5:646-647 My '62. (MIRA 15:5)
(Raman effect) (Methane--Spectra)

MIKHAYLOV, G.V.

Structure and line width of Raman scattering of gases at high pressures. Trudy Fiz. inst.27:150-189 '64. (MIRA 17:9)

L 37659-65 EWT(m)/EPF(c) Pr-4

ACCESSION NR: AT4042138 S/2504/64/027/000/0150/0189 21 19 B+1

AUTHOR: Mikhaylov, G.V.

TITLE: A study of the structure and width of combination scattering lines from gases at high pressures

SOURCE: AN SSSR. Fizicheskiy institut. Trudy, v. 27, 1964. Issledovaniya po molekulyarnoy spektroskopii (Research in molecular spectroscopy), 150-189

TOPIC TAGS: combination line width, combination line structure, rotational band, vibrational band, collision broadening, oxygen spectrum, methane spectrum, high pressure spectrum, nitrogen spectrum, molecular spectroscopy

ABSTRACT: In this thesis defended on 24 October 1962 at the Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova, (Physics Department of Moscow State University), the author gives, on the basis of 22 Soviet and 39 western references, a general survey of the problem of the structure and width of combination scattering lines from gases at high pressures. He also presents the results of some of his original experiments. A detailed discussion of the collision broadening of the molecular spectral lines in gases is followed by a description of the experimental setup.

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L 37659-65
ACCESSION NR: AT4042138 2

of studies of the rotational bands of combination scattering of oxygen and nitrogen gas at various pressures, of a Q-branch study of the vibrational bands of combination scattering from the same gases under similar conditions, and of studies of the combination scattering of methane at various pressures. Most of the results were published earlier and are now incorporated into the thesis. "The initial stages of the study were carried out under the guidance of G. S. Landsberg. The author also thanks Prof. Pavel Alekseyevich Bazhulin for his constant attention and help." Orig. art. has: 16 formulas, 26 figures, and 6 tables.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva, Akademiya nauk SSSR (Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 00 ENCL: 00 SUB CODE: GP, ME

NO REF SOV: 022 OTHER: 039

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2/2
Card

L 64775-65 EEC(k)-2/EWA(h)/EWA)k)/EWT(1)/EWT(m)/FBD/EWP(1)/EWP(b)/T/EWA(m)-2/EWP(k)/
ACCESSION NR: AP5021736 EWP(e) SCTB/LJP(c) WG/WH UR/0386/65/002/002/0095/0097

AUTHOR: Pedilov, M. R.; Tikhachev, V. M.; Mikhaylov, G. V.; Rabinovich, M. S.

TITLE: Use of the pinch-effect for optical laser pumping

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 2, 1965, 95-97, and insert attached to p. 97

TOPIC TAGS: glass laser, neodymium laser, ruby laser, laser pumping, optical pumping, pinch pumping, pinch effect

ABSTRACT: Experimental use of the pinch-effect in gas for the optical pumping of Nd^{3+} glass and ruby lasers is reported at currents up to 300 k-a with a rise rate of 3×10^{11} amp/sec and discharge periods of approximately 4 μsec. The energy source was a specially constructed low-induction 30-μf, 9-kv capacitor bank. The experimental pump light efficiency in the 2000—6000 Å region using krypton gas at a 20 k-a/cm^2 current density was ~12%, and for a 1.2-kj input energy the output energy was ~150 j, of which 50—70 j was in the 4000—6000 Å region, and 80—100 j in the 2000—4000 Å region. The pump light spectrum was continuous and similar to the emission spectrum of a black body at 35,000°K. The neodymium glass rod with silver-coated ends (coefficient of reflection 0.92 and 1.0) was 53 mm long and 7.6 mm in diameter. The

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L 64775-65

ACCESSION NR: AP5021736

3

stimulated emission, which occurred at 1.06 μ after ~15 μsec pumping, was observed for 8 μsec by an FEU-22 photomultiplier equipped with suitable filters. To achieve laser action in the available ruby crystals for the given pinch power, a combined pumping system was used. By placing a ruby crystal in the common focus of a double-branch elliptical reflector, and a quartz discharge chamber (100 mm long and ~30 mm in diameter) and an IFN-800 xenon lamp at the two other foci, the stimulated emission was observed. Under these pumping conditions the pulsed emission frequency increased approximately tenfold, with a 2—2.5-fold increase in the peak pulse amplitude. Orig. art. has: 2 figures. [YK]

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences, SSSR)

44,55

SUBMITTED: 02Jun65 ENCL: 00 SUB CODE: EC

NO REF SOV: 001 OTHER: 001 ATD PRESS: 4079

Card 2/2

L 9497-66 EWA(k)/FBD/EWT(1)/EEC(k)-2/T/EWP(k)/EWA(m)-2/EWA(h) SCTB/IJP(c) WG

ACC NR: AP6000193 SOURCE CODE: UR/0056/65/049/005/1408/1410

AUTHOR: Andreyeva, T. L.; Dudkin, V. A.; Malyshev, V. I.; Mikhaylov, G. V.; Sorokin, V. N.; Novikova, L. A.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences, SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Photodissociation laser

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 5, 1965, 1408-1410

TOPIC TAGS: laser, gaseous state laser, photodissociation

ABSTRACT: The authors investigated the dependence of the oscillation threshold and the pulsed energy output of a photodissociation laser based on CH_3I or CF_3I (recently fabricated by J. V. V. Kasper and G. C. Pimental [Applied physics letters, v. 5, no. 11, 1964, p. 231]) on the pressure of the gaseous CH_3I or CF_3I. In the first series of experiments, the authors used a 50-cm-long argon-filled flash tube with a 50-μf capacitor bank (voltage 2—10 kv). A 60-cm-long quartz tube with a 7-mm inner diameter equipped with Brewster-angle windows was used as the laser tube. The flash tube and the adjacent laser tube were wrapped in aluminum foil. A confocal cavity formed by two concave gold-surfaced mirrors (radius 1 m) was used in the experiments. The output energy of the CF_3I laser pulse was observed to reach a peak at a pressure

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L 9497-66

ACC NR: AP6000193

of 80—100 torr. At this pressure and at a pump power of 1600 j, the average output energy of the CF_3I laser was 10^{-2} j and the peak power, approximately 1 kw. Up to a pump energy of 1600 j, the output energy was a linear function of the pump energy. In another series of experiments with an elliptical lamp, dielectric coated mirrors, and an effective cell and lamp length of 250 mm, the threshold for oscillation decreased by more than a factor of two. For the CF_3I laser, the threshold reached a minimum at about 80 j at a pressure of 10—20 torr. In the case of the CH_3I laser, the threshold was at a minimum at a pressure of less than 1 torr. From the standpoint of high power output CF_3I appears to be more promising than CH_3I since higher power output is obtained at higher pressure. Orig. art. has: 3 figures. [CS]

SUB CODE: 20/ SUBM DATE: 02Jun65/ ORIG REF: 003/ OTH REF: 003/ ATD PRESS: 4162

Card 2/2

ACC NR: AT6033040 SOURCE CODE: UR/2504/66/032/000/0107/0111

AUTHOR: Likhachev, V. M.; Mikhaylov, G. V.; Rabinovich, M. S.

ORG: none

TITLE: Investigation of the radiation of a straight self-compressed discharge (pinch) in the visible and ultraviolet regions. 2. Fast discharge at large current densities

SOURCE: AN SSSR. Fizicheskiy institut. Trudy, v. 32, 1966. Fizika plazmy (Plasma physics), 107-111

TOPIC TAGS: plasma pinch, plasma radiation, UV spectrum, plasma discharge

ABSTRACT: The basic experiments on the dependence of the radiation of the discharge on the voltage supplied (energy) were carried out in a chamber with a diameter of 50 mm and a length of 100 mm (the walls of the chamber were made of quartz and the electrodes of copper). The chamber was filled successively with hydrogen, helium, and krypton at a pressure of 1 torr. For each gas, photos were taken of the spectrum at battery energies of: 135 joules (3 kilowatts), 540 joules (6 kilowatts), and 1200 joules (9 kilowatts). The results are shown in a series of figures. In general the results point to the possibility of using a self-compressed discharge as a pulse source of radiation of small duration with a continuous emission spectrum. In the ultraviolet region, this source yields stronger radiation than a xenon lamp. "In conclusion, the

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ACC NR: AT6033040

authors thank their coworkers in the laboratory, A. N. Pantyushin and A. V. Spiridonova for their help in preparing and carrying out the experiment." Orig. art. has: 4 figures.

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 001

Card 2/2

ACC NR: AT6033039 SOURCE CODE: UR/2504/66/032/000/0097/0106

AUTHOR: Bedilov, M. R.; Likhachev, V. M.; Mikhaylov, G. V.; Rabinovich, M. S.

ORG: none

TITLE: Investigation of the radiation of a straight self-compressed discharge (pinch) in the visible and ultraviolet regions. 1. Fast discharge at small current densities

SOURCE: AN SSSR. Fizicheskiy institut. Trudy, v. 32, 1966. Fizika plazmy (Plasma physics), 97-106

TOPIC TAGS: plasma pinch, plasma radiation, UV spectrum, plasma discharge

ABSTRACT: The experimental apparatus is shown in Fig. 1. The distance between electrodes was 16 cm and the diameter of the electrodes was 20 cm. The source of energy was a battery of condensers with a capacitance of 20 microfarads. Commutation of the current was accomplished with a vacuum discharger with igniting electrodes. The parasitic inductance of the loop was approximately 6 cm. To the electrodes of the chamber there was applied a current of 9 kilowatts, which corresponded to an energy supply of about 1 kilojoule. The apparatus made it possible to generate current pulses up to 300 kiloamps at a discharge time of 4 microseconds. Discharge investigations were carried out for He, Ne, Ar, Kr, Xe, H_2, and air. The discharge

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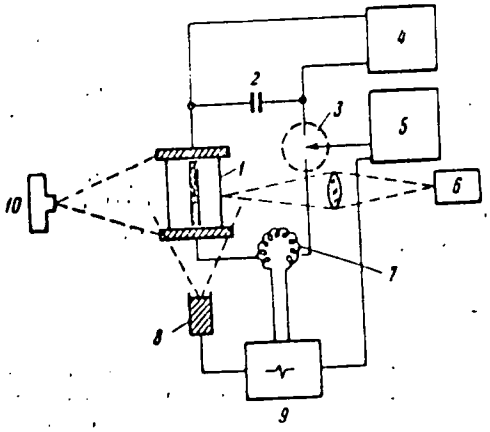

Fig. 1. Scheme of experimental unit.
1—discharge chamber; 2—battery of condensers; 3—vacuum discharger; 4—feeding unit; 5—control unit; 6—ISP-30 spectrograph; 7—Rogowski loop; 8—FEU-14B photomultiplier; 9—OK-17M oscillograph; 10—photochamber.

for each gas was studied at pressures from 10^{-1} to 10 torr. On the basis of the experimental data calculations were made of the distribution of the radiation over the chamber, the time characteristics of the discharge, the spectral composition of the

ACC NR: AT6033039

radiation yield. A large table shows the energy characteristics of the radiation of a pinched plasma for the six gases studied. "In conclusion the authors express their thanks to their laboratory co-workers A. N. Pantyushin and L. N. Spiridonova for help in carrying out the experiments." Orig. art. has: 6 figures and 1 table.

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 006

Card 3/3

L 61775-65 EEC(k)-2/EWA(h)/EWA)k)/EWT(l)/EWT(m)/FBD/EWP(i)/EWP(b)/T/EWA(m)-2/EWP(k)/
ACCESSION NR: AP5021736 EWP(e) SCTB/IJP(c) WG/WH UR/0386/65/002/002/0095/0097

AUTHOR: Bedilov, M. R.; Likhachev, V. M.; Mikhaylov, G. V.; Rabinovich, M. S.

TITLE: Use of the pinch-effect for optical laser pumping

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 2, 1965, 95-97, and insert attached to p. 97

TOPIC TAGS: glass laser, neodymium laser, ruby laser, laser pumping, optical pumping, pinch pumping, pinch effect

ABSTRACT: Experimental use of the pinch-effect in gas for the optical pumping of Nd^{3+} glass and ruby lasers is reported at currents up to 300 k-a with a rise rate of 3×10^{11} amp/sec and discharge periods of approximately 4 μsec. The energy source was a specially constructed low-induction 30-μf, 9-kv capacitor bank. The experimental pump light efficiency in the 2000—6000 Å region using krypton gas at a 20 k-a/cm^2 current density was ~12%, and for a 1.2-kJ input energy the output energy was ~150 J, of which 50—70 J was in the 4000—6000 Å region, and 80—100 J in the 2000—4000 Å region. The pump light spectrum was continuous and similar to the emission spectrum of a black body at 35,000K. The neodymium glass rod with silver-coated ends (coefficient of reflection 0.92 and 1.0) was 53 mm long and 7.6 mm in diameter. The

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L 64775-65

ACCESSION NR: AP5021736

3

stimulated emission, which occurred at 1.06 μ after ∿15 μsec pumping, was observed for 9 μsec by an FEU-22 photomultiplier equipped with suitable filters. To achieve laser action in the available ruby crystals for the given pinch power, a combined pumping system was used. By placing a ruby crystal in the common focus of a double-branch elliptical reflector, and a quartz discharge chamber (100 mm long and ∿30 mm in diameter) and an IFN-800 xenon lamp at the two other foci, the stimulated emission was observed. Under these pumping conditions the pulsed emission frequency increased approximately tenfold, with a 2--2.5-fold increase in the peak pulse amplitude. Orig. art. has: 2 figures. [YK]

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 02Jun65 ENCL: 00 SUB CODE: EC

NO REF SOV: 001 OTHER: 001 ATD PRESS: 4079

Card 2/2

3(10) PHASE I BOOK EXPLOITATION SOV/3255

Tarasov, G., and I. Mikhaylov

Reaktivnoye oruzhiye (Missile and Rocket Weapons) Moscow, Izd-vo DOSAAF, 1959. 46 p. 38,000 copies printed.

Ed.: M.D. Kanevskaya; Tech. Ed.: G.I. Blazhenkova,

PURPOSE: The booklet is intended for the general reader interested in military science and armaments.

COVERAGE: This booklet, based mainly on non-Soviet sources, surveys the leading types of missiles used by the military. The first part of the booklet discusses the principles of reaction propulsion and analyses the different types of fuel employed. The second part of the work describes individual missiles and rockets, mainly those of the United States Armed Forces. No personalities are mentioned. There are 6 English references.

~~TABLE OF CONTENTS:~~

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MIKHAYLOV, I.

Aggressors climb into space. Kryl.rod. 14 no.6:41-42 Je '63.
(MIRA 16:7)

(Space flight)

MIKHAYLOV, I. (Rostov-na-Donu)

State controllers. Fin.SSSR 38 no.2:82-86 F '64. (MIRA 17:2)

MIKHAYLOV, I.

In Kharkov after the liberation. Voen.znan. 41 no.11:11-12 N '65. (MIRA 18:12)

DOKOV, R.D.; POPOV, At.G.; GEORGIYEV, G.I.; MIKHAYLOV, Iv.

Morphology of some metasomatic lead-zinc deposits in the Madan ore region. Geol.rud.mestorozh. no.4:29-46 Jl-Ag '62. (MIRA 15:8)

1. Nauchno-issledovatel'skiy geologicheskiy institut pri Upravlenii geologicheskoy razvedki i okhrany zemnykh nedr Narodnoy Respubliki Bolgarii.
(Madan region, Bulgaria--Lead ores)
(Madan region, Bulgaria--Zinc ores)

[illegible], I. .

Sewing Machines

Pending tasks of sewing machine construction.
Leg. Prom. 12 no. 4, 1952

Monthly List of Russian Accessions, Library of Congress, July 1952. Unclassified.

MIKHAYLOV, I.A., mayor meditsinskoy sluzhby

Measures for preventing chronic poisoning with mercury vapors. Voen.-med. zhur. no.8:48-49 Ag '61. (MIRA 15:2)
(MERCURY--TOXICOLOGY)

SOV/137-59-3-6852 D

Translation from: Referativnyy zhurnal Metallurgiya, 1959, Nr 3, p 276 (USSR)

AUTHOR: Mikhaylov, I A

TITLE: An Investigation of the Plastic Properties of the Heat-resistant Alloy EI-617 and the Development of a Precision-Stamping Process for Jet-engine Turbine Blades (Issledovaniye plasticheskikh svoystv zharoprochnogo splava EI-617 i razrabotka tekhnologicheskogo protsessa tochnoy shtampovki lopatok turbin reaktivnykh dvigateley)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to the Mosk aviats tekhnol in-t (Moscow Aviation Technological Institute, Moscow, 1958

ASSOCIATION: Mosk aviats tekhnol in-t (Moscow Aviation Technological Institute), Moscow

Card 1/1

MIKHAYLOV, I. A., Engr. Cand. Tech. Sci.

Dissertation: "Obtaining of Industrial Gas from the Gils of Heat Tar." Moscow Heat Inst, 21 Oct 47.

SO: Vechernyaya Moskva, Oct, 1947 (Project #1[illegible]

SOV/81-59-16-58512

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 16, p 411 (USSR)

AUTHORS: Zherdeva, L.G., Mikhaylov, I.A., Demchenko, A.D., Cherchenko, N.V., Timofeyeva, K.M.

TITLE: The Possibilities of Using the Continuous Process of Adsorption Separation of Petroleum Fractions

PERIODICAL: Tr. Vses. n.-i. in-t po pererabotke nefti i gaza i polucheniyu iskusstv. zhidk. topliva, 1958, Nr 7, pp 93-103

ABSTRACT: In a laboratory installation experiments were made regarding the continuous purification by an adsorbent (crumbled Al-Si catalyst) of distillate and deasphaltized residual fractions of sulfurous (Tuymazy, Romashkino, and their mixtures) and low-sulfurous (Emba, Zhirnovo, Baku) petroleum. The purification was carried out in the counter-flow system at continuous contacting of the descending adsorbent layer with the ascending raw material flow and with continuous desorption by solvents and regeneration of the adsorbent. The process can be applied to products of various viscosity and used to obtain oils, paraffins and fuels.

Card 1/1 Ye. Pokrovskaya.

ZHERDEVA, L.G.; MIKHAYLOV, I.A.; DEMCHENKO, A.D.; CHERCHENKO, N.V.; LEVINSON, S.Z.; TIMOFEYEVA, K.M.

Production of lubricating oils by adsorption refining with a moving bed of adsorbent. Trudy VNII NP no.7:103-119 '58. (MIRA 12:10)

(Lubrication and lubricants) (Adsorption)

ZHERDEVA, L.G.; MIKHAYLOV, I.A.; KROL', B.B.; CHERCHENKO, N.V.; LOKTIONOVA, Ye.L.

Testing new silica alumina gel adsorbents for the adsorption stripping of oils. Trudy VNII NP no.7:155-166 '58. (MIRA 12:10)

(Petroleum products) (Adsorbents--Testing)

S/065/62/000/006/001/007
E075/E136

5 330

AUTHORS: Denisenko, K.K., Badyshtova, K.M., Mikhaylov, I.A., Chesnokov, A.A., Burmistrov, G.G., and Kosova, V.A.

TITLE: Ways of increasing the yield of high quality residual oils from Eastern sulphurous crudes

PERIODICAL: Khimiya i tekhnologiya topliv i masel, no.6, 1962, 11-15

TEXT: High quality brightstocks were obtained by adsorptional refining of vacuum residues from high-sulphur Eastern crudes. The adsorbent was a granulated catalyst and benzine was used as a solvent. The moving bed process was described previously (Trudy VNII NP, v.7, Gostoptekhizdat, 1958, 93-103). The extraction, even for phenol to oil ratio of 4.7 to 1, gave raffinates with 0.81% coke values instead of the specified 0.45-0.65%. One promising refining treatment was the adsorptional refining after phenol extraction. For phenol to oil ratio of 3:1 and adsorbent to oil ratio of 1.5:1, light raffinates were obtained having the viscosity of 17.80-17.51 cs at 100 °C and coke values 0.36-0.21%. Even better results were obtained using

Card 1/2

Ways of increasing the yield of ... S/065/62/000/006/001/007
E075/E136

only the adsorptional refining, with the adsorbent to oil ratio 3:1 and 3.5:1, which gave very light raffinates having the viscosity at 100 °C of 16.62-15.99 cs and 0.26-0.19% coke values. The latter method had an additional advantage in that it gave raffinates from which wax could be filtered 30-50% more rapidly than from the solvent raffinates of a less viscous deasphalted residue. Application of the adsorptional method to a deasphalted residue having a coke value of 1.15% gave brightstocks with coke values of 0.2-0.13%, colour 1.5 points, viscosity at 100 °C 20.13 to 18.38 cs, viscosity index of 85-95 and pour point of -20 °C. The yield of the oils was 15.6-13.6% of the vacuum residue compared with 12.5-11.2% obtained when the solvent extraction was used. The use of the adsorptional refining together with or without the solvent extraction obviates the use of clay treatment.
There are 1 figure and 2 tables.

Card 2/2

MIKHAYLOV, I.A.; LOKTIONOVA, Ye.L.

Adsorption properties of molecular sieves during liquid phase sorption of hydrocarbons. Khim.i tekh.topl.i masel 8 no.11: 4-10 N '63. (MIRA 16:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gazov i polucheniyu iskusstvennogo zhidkogo topliva.

IZOTOVA, N.P.; MIKHAYLOV, I.A.; LEVINSON, S.Z.

Viscous distillate lubricants from adsorption purification. Khim. i tekh. topl. i masel 9 no.6 28-34 Je '64 (MIRA 17:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i polucheniyu iskusstvennogo zhidkogo topliva.

L 20137-65 EPF(c)/EWT(m)/T/ Pr-4 WE
ACCESSION NR: AP4049722 S/0318/64/000/001/0017/0022

AUTHOR: Denisenko, K. K.; Mikhaylov, I. A.

TITLE: Adsorption-purified motor oil distillates of Mukhanov Devonian crude

SOURCE: Neftepererabotka i neftekhimiya, no. 1, 1964, 17-22

TOPIC TAGS: adsorptive purification, Devonian crude, motor oil distillate, petroleum refining, aluminosilicate adsorbent

ABSTRACT: The authors carried out laboratory tests on the adsorption purification of the heavy distillates of crude oil from the Nukhanov fields (Kuyby*shev oblast) using alumino silicates. Unlike the crude from the Tuymazy* fields, also of Devonian origin, this oil contains little sulfur and asphalt or resins. Its high-boiling fractions (400-450 and 450-500C) are high-quality raw materials for motor oil production. Adsorption purification by a moving adsorbent produces oils with viscosities of 6, 8, or 10 centistokes at 100C without addition of the residual component. Adsorption oils from distillates of Mukhanov crude can be prepared by superficial adsorption, are of clear light color (NPA 1-1.5), have a low sulfur content, a high viscosity and good thermal oxidation properties according to the Papok test. The oil yield from distillate amounts to 50-58%. Diesel oil production (types

Card 1/2

L 20137-65
ACCESSION NR: AP4049722

4

A-8, A-9.5, D-11) by this method is also possible. The quantity of adsorbent varied in relation to the distillate in the range from 1:1 to 1:3. The aluminosilicate adsorbent (85% consisting of fractions 0.25-0.5 mm) is not further described. Detailed characteristics of the products are given. The laboratory operation was done in countercurrent at 40-45C in an alkylate solvent, b.p 95-130C. "Distillation was carried out in Section 1 of VNIINP under the supervision of V. S. Yerinov and A. V. Afonskiy." Orig. art. has: 1 figure and 4 tables.

ASSOCIATION: Kuyby*shevskiy gosudarstvenny*y nauchnoissledovatel'skiy institut neftyanoy promy*shlennosti (Kuyby*shev State Scientific Research Institute of the Petroleum Industry)

SUBMITTED: 00 ENCL: 00 SUB CODE: FP

NO REF SOV: 003 OTHER: 000

Card 2/2

MIKHAYLOV, I.A.; IZOTOVA, [illegible]; L[illegible], [illegible]

Adsorption purific[illegible] [illegible] Nefteper. i neftekh[illegible] [illegible]

1. Vsesoyuznyy nauchno-issledovatel'skiy institut [illegible] neftyanogo i gaza i polucheniya iskusstvennogo [illegible]

KAZ'MIN, V.G.; MIKHAYLOV, I.A.; SHATSKIY, V.N.

Rift structures in northwestern Syria. Sov. geol. 7 no.6:81-92
Je '64 (MIRA 18:1)

MIKHAYLOV, I.A.; POLYAKOVA, A.A.; KHMEL'NITSKIY, R.A.; IZOTOVA, N.P.; MEDVEDEV, F.A.; CHERNYSHEVA, M.M.

Mass spectrometer investigation of the hydrocarbon composition of the paraffin-naphthene component of distillate lubricants. Khim. i tekh. topl. i masel 9 no.12:15-20 D '64. (MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i polucheniyu isskusstvennogo zhidkogo topliva.

L 3360-66 EWT(m)/EPF(c)/T/EWP(t)/EWP(b) IJP(c) JD

ACC NR: AP5025602 UR/0129/65/000/010/0050/0051
621.785.53:541.132

AUTHOR: Mikhaylov, I. A. 44,55

TITLE: Ion ratios in discharge nitriding

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 10, 1965, 50-51

TOPIC TAGS: nitriding, glow discharge, nitrogen, ion source, ionization spectrum

ABSTRACT: The authors present the results of an experimental spectrometric investigation of the processes occurring around the glow-discharge on using for this purpose a specially developed ion source with a built-in discharge tube. A small aperture was made in the cathode, and positive ions entered this aperture through inertia, thus bombarding the cathode and forming the so-called canal rays. These rays were examined by means of a mass spectrometer. The operating conditions of the source corresponded to the regimes of discharge nitriding, with pure nitrogen used as the working gas. The investigation revealed the presence of the nitrogen ions N^+, N_2^+, N_3^+, N_4^+ and weak hydride and oxygen-containing ions. It was established that the intensity of the ions of molecular nitrogen N_2^+ predominated in the overall ion current and that the composition and intensity of the ions are a function of the regimes of glow discharge, i.e. pressure in the discharge, voltage, and the density of discharge current. Since atomic nitrogen was of principal interest, the invest-

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L 3360-66

ACC NR: AP5025602

igation dealt with the ratios of atomic nitrogen to molecular nitrogen N_2^+ and to the sum total of all the ions of molecular nitrogen, i.e. to $N_2^+ + N_3^+ + N_4^+$ in different regimes of discharge. As the pressure increases from 0.1 to 6 torr (voltage 800 v, current density 3 ma/cm^2) the overall ion current decreases and the amount of atomic nitrogen increases from 18 to 25% owing to molecular nitrogen, although the proportion of atomic nitrogen decreases with respect to nitrogen N_2^+ (see Fig. 1 of the Enclosure). As Fig. 1,b of the Enclosure shows, in the presence of a pressure of 1 torr and current density of 3 ma/cm^2 the amount of atomic nitrogen sharply increases (from 12 to 29%) when the discharge voltage rises from 400 to 1000 v. The overall ion current also increases, and hence the percentage of atomic nitrogen sharply increases. There is, however, no further appreciable increase in the percentage of atomic nitrogen when the current density is increases above 3 ma/cm^2. Hence it appears that 3 ma/cm^2 is to be regarded as the optimal current density. Orig. art. has: 1 figure.

ASSOCIATION: MVTU im. Baumana

SUBMITTED: 00 ENCL: 01 SUB CODE: MM, EE

NO REF SOV: 000 OTHER: 000

Card 2/3

L 3360-66

ACC NR: AP5025602

ENCLOSURE: 01

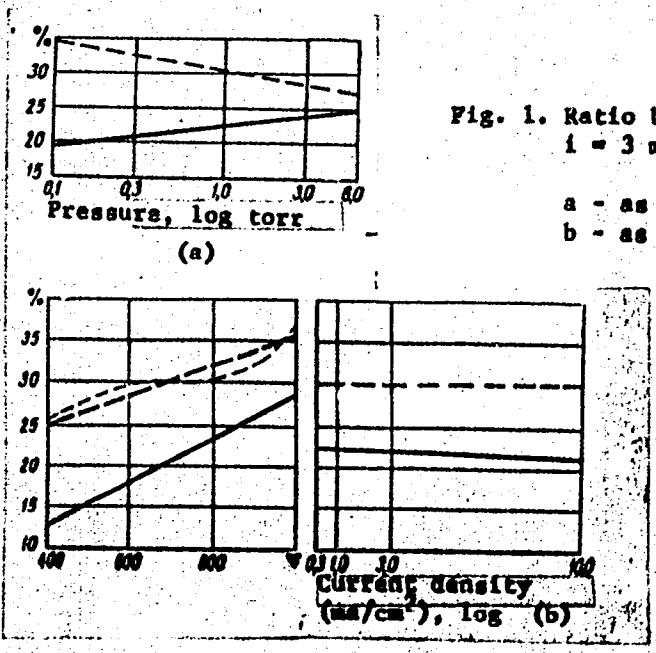

Fig. 1. Ratio between ion currents (u = 800 v; i = 3 ma/cm^2; p = 1 torr):

a - as a function of pressure;
b - as a function of voltage:

--- N^+/N_2^+

$$\frac{N^+}{\Sigma\left(N_2^+ + N_3^+ + N_4^+\right)}$$

Card 3/3 OP

L 25272-66 EWT(m)/T WE

ACC NR: AP6017744 SOURCE CODE: UR/0065/65/000/008/0008/0012

AUTHOR: Mikhaylov, I. A.; Polyakova, A. A.; Khmel'nitskiy, R. A.; Loktionova, Ye. L.; Medvedev, F. A.

ORG: VNII NP

TITLE: Hydrocarbon composition of dearomatized liquid paraffins

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 8, 1965, 8-12

TOPIC TAGS: hydrocarbon, aromatic hydrocarbon, petroleum refining, petrochemistry

ABSTRACT: The hydrocarbon composition of highly dearomatized liquid paraffins of different fractional compositions was investigated. It was shown that they consist of paraffin hydrocarbons of normal and branched structure, monocyclic naphthenes, and aromatic hydrocarbons. In marketed samples of paraffins of the Moscow Petroleum Refinery the content of normal paraffin hydrocarbons was 95%, paraffin hydrocarbons of branched structure 3-4%, naphthene hydrocarbons up to 1%, and aromatic hydrocarbons not more than 0.5%. Normal paraffin hydrocarbons were represented by compounds with from 14 to 22 carbon atoms per molecule, isoparaffin hydrocarbons — from 17 to 24, and naphthene — from 14 to 16 carbon atoms. Marketed paraffins of the Groznyy Petroleum-Oil Plant are characterized by a reduced content of normal-structure paraffin hydrocarbons (90% and lower) and a high content of isoparaffin hydrocarbons (from 8 to 17%). Distribution of normal-structure paraffin hydrocarbons in terms of number of carbon atoms in the molecule was the same as in paraffins from sulfur-containing petroleum stocks, but in a different quantitative ratio. Orig. art. has: 3 figures and 3 tables. [JPRS]

SUB CODE: 11, 07 / SUBM DATE: none

Card 1/1 BLG UDC: 665.41:553.98

MIKHAYLOV, I. B.

95

S/089/62/013/006/019/027
B102/B186

AUTHORS: G. T. and M. R.

TITLE: Nauchnaya konferentsiya Moskovskogo inshenerno-fizicheskogo instituta (Scientific Conference of the Moscow Engineering Physics Institute) 1962

PERIODICAL: Atomnaya energiya, v. 13, no. 6, 1962, 603 - 606

TEXT: The annual conference took place in May 1962 with more than 400 delegates participating. A review is given of these lectures that are assumed to be of interest for the readers of Atomnaya energiya. They are following: A. I. Leypunskiy, future of fast reactors; A. A. Vasil'yev, design of accelerators for superhigh energies; I. Ya. Pomeranchuk, analyticity, unitarity, and asymptotic behavior of strong interactions at high energies; A. B. Migdal, phenomenological theory for the many-body problem; Yu. D. Fivejskiy, deceleration of medium-energy antiprotons in matter; Yu. M. Kogan, Ya. A. Iosilevskiy, theory of the Mössbauer effect; M. I. Ryazanov, theory of ionisation losses in nonhomogeneous medium; Yu. B. Ivanov, A. A. Rukhadze, h-f conductivity of subcritical plasma;

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18

B/089/62/013/006/019/027
B102/B186

Nauchnaya konferentsiya...

B. V. Pletnev, F. M. Spevakov, A. M. Stolov, supply of synchrotron electromagnets; G. L. Saksaganskiy, V. Ya. Moiseyev, flanged separable heat-resistant junctions of great diameter; B. G. Klimov, A. S. Vayradyan, V. P. Yeveseyev, I. B. Mikhaylov, I. M. Afonskiy, B. N. Belov, Ye. I. Manonov, B. I. Strelkov, Ye. V. Sedykh, B. A. Shchukin, optical principles in computer engineering technique; R. S. Nakhmanson, N. M. Roysin, M. E. Mostovlyanskiy, Yu. A. Volkov, electronics; Ye. L. Sulim, transmitter for electromagnet; a flow-meter, V. M. Ovsyankin, V. M. Plushnikov, application of varicondes for transforming d.c. into a.c.

Card 4/4

L 27269-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RPL BW/WW/JFW/JWD/RM

ACCESSION NR: AP4011449 S/0076/64/038/001/0156/0160

AUTHOR: Karpukhin, O. N. (Moscow); Shlyapintokh, V. Ya. (Moscow); Mikhaylov, I. D. (Moscow)

34
26
B

TITLE: Chemiluminescence and the rate of the elementary reaction in the co-oxidation of cumene and ethylbenzene.

SOURCE: Zhurnal fiz. khim. v. 38, no. 1, 1964, 156-160

TOPIC TAGS: chemiluminescence, oxidation kinetics, cumene oxidation kinetics, ethylbenzene oxidation kinetics, peroxide radical recombination

ABSTRACT: The dependence of the chemiluminescence intensity upon the mixture composition in the azobisisobutyronitrile-initiated co-oxidation of cumene and ethylbenzene was investigated. The system contains two kinds of active radicals whose recombination excites chemiluminescence. The relative contribution of each radical is shown in Figure 1, the change in intensity in relation to composition in Figure 2. Chemiluminescence intensity quantitative-

Card 1/2

L 27269-65

ACCESSION NR: AP4011449 2

ly characterized the relative reaction rates of recombination of the cumene and ethylbenzene radicals. Orig. art. has: 3 figures and 4 equations.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AN SSSR)

SUBMITTED: 25Apr63 ENCL: 02

SUB CODE: GC, OP NO REF SOV: 010 OTHER: 001

Card 2/4

L 00938-66 EWT(1)/EPA(s)-2/EWT(m)/EPF(c)/EWP(j)/T/EWA(h) IJP(c) AT/RM

ACCESSION NR: AP5019731 UR/0379/65/001/002/0229/0241

AUTHOR: Kubarev, S. I.; Mikhaylov, I. D.

TITLE: Calculation of kinetic coefficients for certain organic semiconductors

SOURCE: Teoreticheskaya i eksperimental'naya khimiya, v. 1, no. 2, 1965, 229-241

TOPIC TAGS: organic semiconductor, electron mobility, anthracene, naphthalene, electric conductivity, band theory

ABSTRACT: An approximate solution is derived for the kinetic equation for semiconductors with a narrow conduction band (such as naphthalene and anthracene). On the basis of this solution, certain kinetic coefficients were calculated. The contribution of transfer processes into the relaxation time was taken into account. A numerical estimate of this contribution for the electrical conductivity shows that when transfer processes are considered, the conductivity decreases approximately by a factor of two. The temperature dependence of the mobility obtained agrees qualitatively with the experimental data, which lead to a relation of the type $\mu \sim \frac{1}{T^a}; 1 < a < 2$. Using the approximation under consideration, a very

Card 1/2

L 00938-66

ACCESSION NR: AP5019731

simple formula was obtained for the thermoemf:

$$Q = \frac{\varepsilon_{max}}{dT}.$$

but the lack of experimental data on the temperature dependence of the thermoemf did not permit a comparison with the experiment. It is concluded that the kinetic equation is applicable when $\varkappa \lesssim 1$ cm^2/sec. Orig. art. has: 4 figures and 54 equations.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR, Moscow (Institute of Chemical Physics, AN SSSR).

SUBMITTED: 26Oct64 ENCL: 00 SUB CODE: SS, OC

NO REF SOV: 001 OTHER: 006

Card 2/2

L 29136-66 EWP(1)/EWT(m) IJP(c) RM

ACC NR: AP6018674 SOURCE CODE: UR/0379/65/001/004/0488/0493

35
B

AUTHOR: Kubarev, S. I.; Mikhaylov, I. D.

ORG: Institute of Chemical Physics, AN SSSR, Moscow (Institut khimicheskoy fiziki AN SSSR)

15

TITLE: Calculation of the kinetic coefficients for some organic semiconductors. II. Calculation of magnetic resistance and Hall constant

SOURCE: Teoreticheskaya i eksperimental'naya khimiya, v. 1, no. 4, 1965, 488-493

TOPIC TAGS: organic semiconductor, approximation, anthracene

ABSTRACT: The Hall constant, magnetic resistance and Hall motion for a certain class of organic semiconductors are calculated on the basis of the approximation solution of the kinetic equation for the case of narrow energy zones, derived earlier by the authors (see TEKh, No 1, 1965, p 229). A comparison with the experiment for the case of phthalocyanine indicates that the scheme developed is in satisfactory agreement with the experimental data. Certain values for anthracene, pyrene, free phthalocyanine, and copper phthalocyanine are presented in a table, some of which were taken from the literature while others were derived from the present efforts or in the previous work of the authors. [Orig.art.has: 30 formulas, 1 table.]

SUB CODE: 20 / SUBM DATE: 10Dec64 / ORIG REF: 002 / OTH REF: 005 [ATD]

Card 1/1 nc

SOV/124-57-3-2955

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 3, p 45 (USSR)

AUTHOR: Mikhaylov, I. E.

TITLE: The Effect of the Cross-sectional Shape of a Volute Turbine Chamber on the Efficiency of the Turbine, and the Selection of the Design Condition for the Volute (Vliyaniye formy poperechnogo secheniya turbinnoy spiral'noy kamery na k. p. d. turbiny i vybor usloviya rascheta spirali)

PERIODICAL: Tr. Mosk. inzh.-stroit. in-ta, 1956, Nr 16, pp 55-71

ABSTRACT: Bibliographic entry

Card 1/1

ACCESSION NR: AP4009078 S/0016/64/000/001/0112/0119

AUTHOR: Mikhaylov, I. F.; Pers, I. P.

TITLE: Isolation of antibodies from the antigen-antibody complex with the aid of ultrasound

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 1, 1964, 112-119

TOPIC TAGS: antibody production, immunology, antigen-antibody complex dissociation, ultrasound, dysentery antibody, diphtheria antibody, tularemia antibody, corpuscular antigen, fluorescent antibody

ABSTRACT: In an attempt to improve upon existing techniques for the preparation of purified antibodies, which are needed for many immunological reactions, the authors studied the dissociation by ultrasound of the antigen-antibody complexes formed by specific adsorption of immune sera against Flexner dysentery bacilli, diphtheria bacilli and tularemia with the homologous bacteria. The complexes were suspended in saline and subjected to ultrasound from an RFT generator for 45 minutes at an intensity of 5 watts/cm^2 and a frequency of 800 kilocycles/second, after which the purity of the antibodies in the eluate was determined. A 15-20% yield of pure antibody could be obtained, freed of all heterologous antibodies and

Card 1/2

ACCESSION NR: AP4009078

serum albumin. There were no contaminating antigens from the adsorbing bacteria. Electrophoresis showed that the eluted antibodies were globulins (50% alpha, 21.5% beta and 28.5% gamma). Their specificity was confirmed by positive agglutination reactions with homologous bacteria, negative reactions with heterologous microorganisms, and by direct and indirect fluorescent antibody techniques. Orig. art. has: 3 tables.

ASSOCIATION: Moskovskiy institut vaktsin i sy*vorotok im. Mechnikova (Institute for vaccines and sera, Moscow)

SUBMITTED: 23Feb63	DATE ACQ: 03Feb64	ENCL: 00
SUB CODE: AM	NO REF SOV: 002	OTHER: 010

Card 2/2

M'K Halov, I.F.

VERKIN, B.I.; MIKHAYLOV, I.F.

Magnetic properties of metals at low temperatures. Part 2. Effect of a magnetic field on the magnetic susceptibility of zinc single crystals in the temperature range from 20,4° to 300° K. Zhur.eksp. i teor.fiz. 24 no.3:342-346 Mr '53. (MLRA 7:10)
(Zinc--Magnetic properties) (Metallography)

MIKHAYLOV, I.F.

USSR.

Magnetic properties of metals at low temperatures. III. Form of curvature for periodic curves. Dependence of the magnetic susceptibility of metals on the field. B. I. Verkin and I. F. Mikhailov. *Zhur. Eksptl. i Teoret. Fiz.* 25, 471-8(1953); cf. *C.A.* 46, 10725d.—B. and M. describe the construction of an app. for investigating the anisotropy of the magnetic properties of monocrystals of Be, Zn, Bi, Sb, and Ga by the method of compensation. A study of the magnetic properties of monocrystals of Be shows that the curve for the temp. dependence of the difference of the principal specific susceptibilities $\Delta\chi$ has a max. near 30°K. The form of curvature of the periodic curve $\Delta\chi$ on the magnetic field was studied at 20.4 and at 4.2°K.; new peculiarities were found at 4.2°K. Franz H. Rathmann

80
82

MIKHAYLOV, I. F.

USSR/ Physics

Card 1/1 Pub. 22 - 10/51

Authors : Verkin, B. I.; Dmitrenko, I. M.; and Mikhaylov, I. F.

Title : Fine structure of the " phenomenon of a complex periodical dependence of the magnetic susceptibility of metals upon the field at low temperatures

Periodical : Dok. AN SSSR 101/2, 233-236, Mar 11, 1955

Abstract : The magnetic properties of Mg, Zn and Be monocrystals were investigated at an interval of 1500 to 20000 oersteds and temperature of $\leq$ 4.2° K for the purpose of finding a simple interpretation for the "structure" of the phenomenon of a complex periodical dependence of the magnetic susceptibility of metals upon the magnetic field at low temperatures. The results obtained are discussed. Eight references: 2 English and 6 USSR (1938-1954). Graphs.

Institution : Academy of Sciences, Ukr SSR, Physico-Technical Institute

Presented by: Academician L. D. Landau, October 2, 1954

MIKHAYLOV, I. F., DMITRENKO, I. M., LAZAREV, B. G., VERKIN, B. I., (Kharkov)

"Magnetic Properties of Non-Ferromagnetic Metals at Low Temperatures," a paper presented at the International Conference on Physics of Magentic Phenomena, Sverdlovsk, 23-31 May 56.

24(0) SOV/89-7-2-3/24

AUTHORS: Borovik, Ye. S., Lazarev, B. G., Mikhaylov, I. F.

TITLE: A Hydrogen Condensation Pump With a Built-in Liquifier (Vodorodnyy kondensatsionnyy nasos s avtonomnym ozhizhitelem)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 2, pp 117 - 121 (USSR)

ABSTRACT: Most drawbacks of the pump described in reference 1 are eliminated in the newly developed pump by the fact that the hydrogen is liquified directly in the pump. Two sectional views show the components and the construction of the pump as well as give, to a certain extent, description of the components and their functions. The liquifier is in connection with the compressor (10 m^3/h), but can also be attached to a 17 m^3/h compressor because it has sufficient cooling surface. The operational capacity of the pump was tested with an iron container of $\sim$ 1.5 m^3 content. As the container had a number of flanges and threaded pipe connections, special inside cleaning was impossible and due to this fact a vacuum of only 3 10^{-8} mm Hg was achieved. The suction rate of the pump was experimentally determined to be 37 10^3 l/sec in the 10^{-7} - 10^{-5} pressure range, and it was also established

Card 1/3

that this rate as independent of the pressure. A separate test established that the pump functions even if there is a considerable formation of gas in the vessel to be evacuated and if there is a considerable amount of dirt on the cooling surface By inserting a water cooled shutter between the recipient and the pump the suction rate was decreased to 17.10^3 l/sec and even under these conditions at the evaporation of iron for example, a vacuum of $1 - 1.5.10^{-6}$ mm Hg was achieved. There are diagrams showing the dependency of hydrogen consumption in case of strong secondary gas formation and the dependency of the liquifier's capacity on the pressure and the thermal stress respectively The maximum capacity of the liquifier is $\sim$ 4 l of liquid hydrogen/h at 60 atm. Calculating this data for a 10 m^3/h-compressor, it means 2 5 lit/h. The maximum evaporation of the whole installation is $\sim$ 21/h. The aggregates of the pump consume $\sim$ 13 kw at a pumping efficiency of $37\ 10^3$ l/sec, including the electric energy needed for liquifying the nitrogen in the liquifier. When the energy consumed for producing the nitrogen needed for cooling the main cock is also considered, the total consumption is $\sim$ 17 kw. An oil diffusion pump of the same capacity has a higher energy consumption. B. P. Batrakov and V I Sharonov

participated in carrying out the measurements. There are 6 figures and 2 Soviet references.

SUBMITTED: February 13, 1959

18.8200

S/126/60/009/02/021/03?
E111/E335

AUTHORS: Mikhaylov, I.F., Kogan, V.S. and Kosik, N.A.

TITLE: The Reasons for the Brittleness of Tungsten Annealed in Vacuum

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 2, pp 283 - 287 (USSR)

ABSTRACT: The apparatus used in the experiment is shown in Figure 1. A high vacuum was obtained by using low-temperature methods. The specimen (in the form of a wire) was heated by passing an electric current through it. Annealing was carried out for one hour at temperatures of 1 000 to 3 200 °C. From 1 000 to 1 200 °C a surface film of oxide is formed and the mechanical properties of annealed specimens in an ordinary or in a "cold" vacuum are the same. Above 1 200 °C the oxide film disappears. At 1 300 °C specimens annealed in a "cold" vacuum are plastic and those in an ordinary vacuum are brittle. The wire heated in a "cold" vacuum has a considerably lower elastic limit than the original specimen. The specimens annealed in a "cold" vacuum retain their plasticity up to 2 100 °C. It is proposed

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S/126/60/009/02/021/033
E111/E335

The Reasons for the Brittleness of Tungsten, Annealed in Vacuum

that the reason for the brittleness of samples annealed in an ordinary vacuum is the formation of a layer of tungsten carbide on the surface. This is confirmed by X-ray analysis. Removing this layer by etching restores the plastic properties. Above 2 100 °C the change in plastic properties is due to recrystallization This has been shown by X-ray analysis. Acknowledgments are expressed to Professor Ye.S. Borovik for his criticism and useful comments.
There are 2 figures and 10 references, 3 of which are English, 1 German and 6 Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR (Physico-technical Institute of the Ac.Sc., Ukrainian SSR

SUBMITTED: July 7, 1959

Card 2/2

20387

11.3110
11.1220

S/184/61/000/001/001/014
A104/A029

AUTHORS: Borovik, Ye.S., Professor, Doctor of Physics and Mathematics
Mikhaylov, I.F., Engineer

TITLE: Automated Hydrogen Liquefaction Cycle Without Gas-Holder

PERIODICAL: Khimicheskoye Mashinestroyeniye, 1961, No. 1, pp. 1-2

TEXT: The increased use of liquid hydrogen and other liquid gases for cooling large machinery (Refs 1-4) is discussed. In order to simplify the complicated maintenance of gas-holders, a closed cycle liquefaction device without gas-holder and with automatic pressure adjustment of the circulating gas was developed (Fig 1). The cycle was used to supply the hydrogen liquefier of a condensation pump at a rate of $4 \cdot 10^4$ l/sec (Ref 2). The limit amount of liquid hydrogen is determined by the position of the hydrogen outlet tube in the liquefier collector. Liquid hydrogen collects up to a certain level, above which it is carried away by the outgoing gas. Finally, the entire amount of gas can be pumped into cylinders through a filter (7) and a valve (8). Both automatic valves (6) and (11) are pneumatic; their performance is based on the deflection of the membrane caused by varying pressures. The constant counterpressure

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Automated Hydrogen Liquefaction Cycle Without Gas-Holder

of valve (11) is insured by gas contained in the ballast container (9) and of the valve (6) by atmospheric pressure. Fig 2 shows the design of the ultimate pressure valve; its body consists of two parts (1) and (5) divided by a 20 mm diameter rubber membrane (2). The valve ensures the upper pressure limit to an accuracy of 1 atm at a 200-atm maximum pressure. Rubber membranes of 1 mm thickness withstand pressure drops of 300 atm. Fig 3 shows the design of the automatic gas supply valve consisting of a short cylinder (1), the ends of which are covered by two rubber diaphragms (2). The operating diameter of the diaphragms is 105 mm and the valve maintains a constant pressure to an accuracy of 0,002 atm. High accuracy is essential in order to prevent air intake through the pumping line of the compressor. A two-stage КВД (KVD) air compressor of 10 m^3/h capacity per operating pressure of 60 atm was used. High compression in the cylinder leads to intensified decomposition of lubricants, which necessitates careful purification of high-pressure hydrogen before entering the liquefier. Purification with the help of an adsorption filter and a freezer ensures continuous operation of the liquefier for six

Automated Hydrogen Liquefaction Cycle Without Gas-Holder

months. Analysis of the operating gas after six months showed that the content of oxygen does not exceed 0,050%, which freezes quickly. The freezer is a counter-flow heat exchanger with its lower part immersed in liquid nitrogen. The consumption of nitrogen for one compressor is 0.5 - 0.8 liter per minute. One compressor is sufficient in continuous operation, whereas two must be switched on prior to attaining the normal operation rate. During operation with two KVD compressors liquid hydrogen begins collecting after two hours. In steady conditions the throttle valve required no regulation. The liquefaction cycle of the installation consists of: two KVD compressors, two 40-liter containers, one of them filled with hydrogen; a BH-2 (VN-2) forepump for pumping out nitrogen; and purification devices as described above. The installation requires a working area of 1.5 - 2 m^2. There are 3 figures and 4 references: 2 Soviet, 2 English.

Card 3/6

BOROVIK, Ye.S.; MIKHAYLOV, I.F.; KOSIK, N.A.

Hydrogen liquefiers with high-efficiency heat exchangers. Prib. i tekh. eksp. 8 no.3:165-168 My-Je '63. (MIRA 16:9)

1. Fiziko-tekhnicheskiy institut AN UkrSSR.
(Liquid hydrogen) (Heat exchangers)

L 53869-65 EWT(1)/EWT(m)/EPF(c)/EPF(n)-2/EWG(m)/EPR/T Pr-4/Ps-4/Pu-4

ACCESSION NR: AP5017237 WW/DJ UR/0170/64/000/007/0003/0008

AUTHOR: Borovik, Ye. S.; Mikhaylov, I. F.; Kosik, N. A.

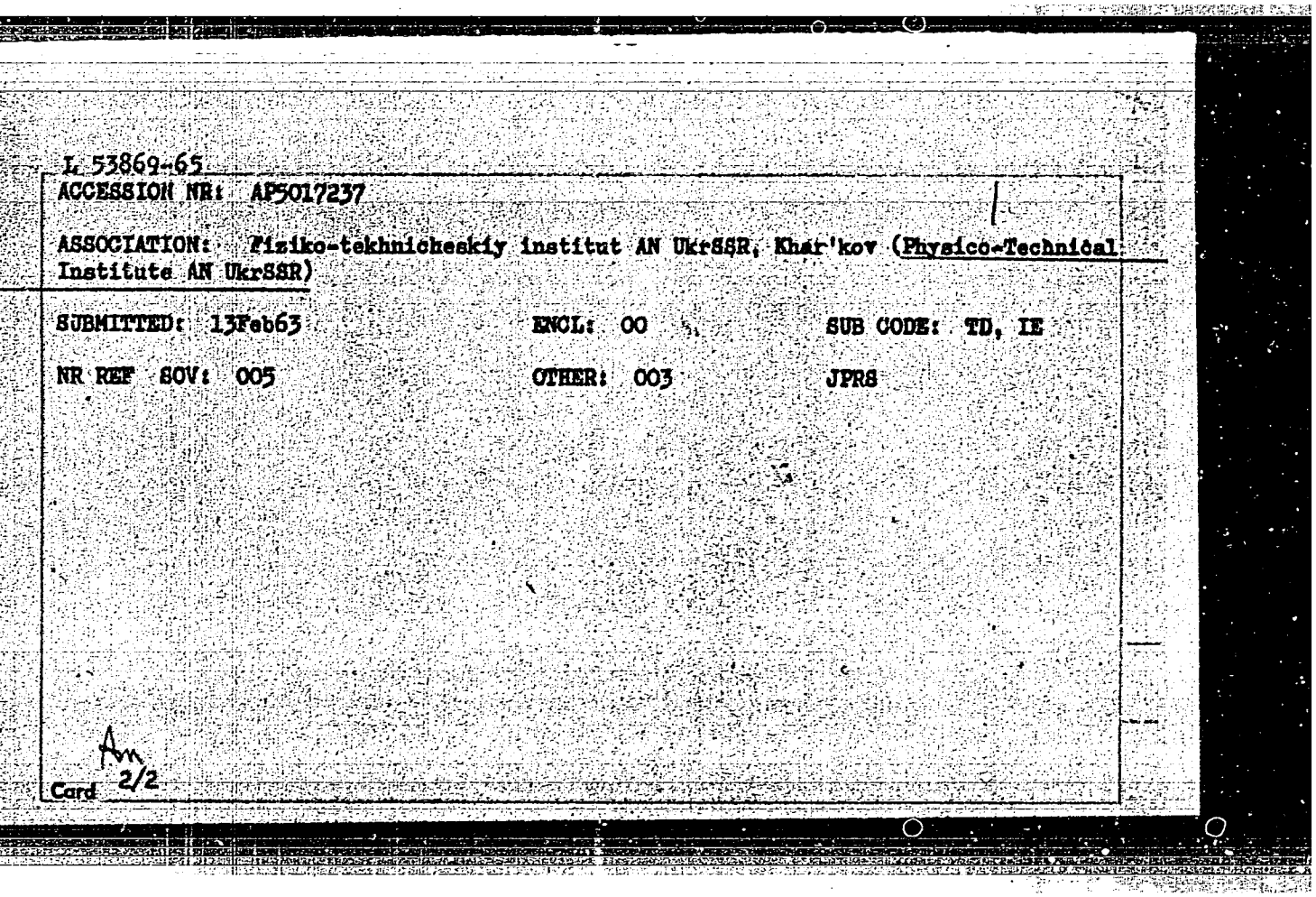
TITLE: Hydraulic friction and heat transfer in spiral counterflow heat exchange

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 7, 1964, 3-8

TOPIC TAGS: heat transfer, hydraulic resistance, industrial heat exchanger

ABSTRACT: Experiments on heat transfer and hydraulic resistance in counterflow heat exchangers are described. The exchangers were built of tubes of various sizes welded together to ensure good thermal contact. The tubes were formed into spirals. Large diameter tubes were for low pressure gas flows and the small diameter tubes were for the high pressure flows. The exchanger is fashioned so that each gas flow passes through the tube of optimum diameter. The experiments showed that heat exchangers of this type can be used in large liquifying machines. They are lighter than ribbed tube heat exchangers of similar capacity. Orig. art. has: 1 figure, 12 formulas, 1 graph, 1 table.

Card 1/2



L 53869-65
ACCESSION NR: AP5017237

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov (Physico-Technical Institute AN UkrSSR)

SUBMITTED: 13Feb63 ENCL: 00 SUB CODE: TD, IE

NR REF SOV: 005 OTHER: 003 JPRS

Card 2/2

BOKOVIK, Ye. S.; MIKHAYLOV, L. F., kand. tekhn. nauk; KOBIK, N. A., inzh.

Calculation of the heat exchangers of liquefying machines. Izv. vys. ucheb. zav.; energ. 7 no.5:118-120 My '64 (MIRA 17:7

1. Fiziko-tekhnicheskiy institut AN UkrSSR. 2. Chen-korr. spondent AN UkrSSR (for Bokovik).

L 8393-65 EWT(1)/EWT(m)/EPF(c)/EPF(n)-2/EPR/T/EPA(bb)-2/EWP(q)/EWP(b)/EWA(1)
Pr-4/Ps-4/Pu-4 AFWL/ASD(d)/AEDC(a)/AS(mp)-2/SSD/BSD/ASD(f) WW/JW/JD
ACCESSION NR: AP4048727 S/0185/64/009/007/0749/0758

AUTHOR: Borovy*k, Ye. S. (Borovik, Ye. S.); Mykhaylov, I. F. (Mikhaylov, I. F.); Kosy*k, M. A. (Kosik, N. A.)

TITLE: Investigation of the process of heat transfer and hydraulic resistance in coil-pipe counterflow heat exchangers

SOURCE: Ukrayins'ky*y fizy*chny*y zhurnal, v. 9, no. 7, 1964, 749-758

TOPIC TAGS: heat transfer, heat exchanger, hydraulic resistance, liquefaction, thermodynamics, liquified gas, hydrogen, helium

Abstract: Data are presented on the hydraulic resistance and heat transfer in heat exchangers consisting of pipes of various diameters soldered together at the thermal contact and coiled. The experimental results show that heat exchangers of this type may be used even in relatively large liquefaction machines. Formulae are obtained for the simplified calculation of counterflow heat exchangers of liquefaction machines, and a brief table is given of all data required for calculating the choke coil liquefiers of hydrogen and helium.

Card 1/2

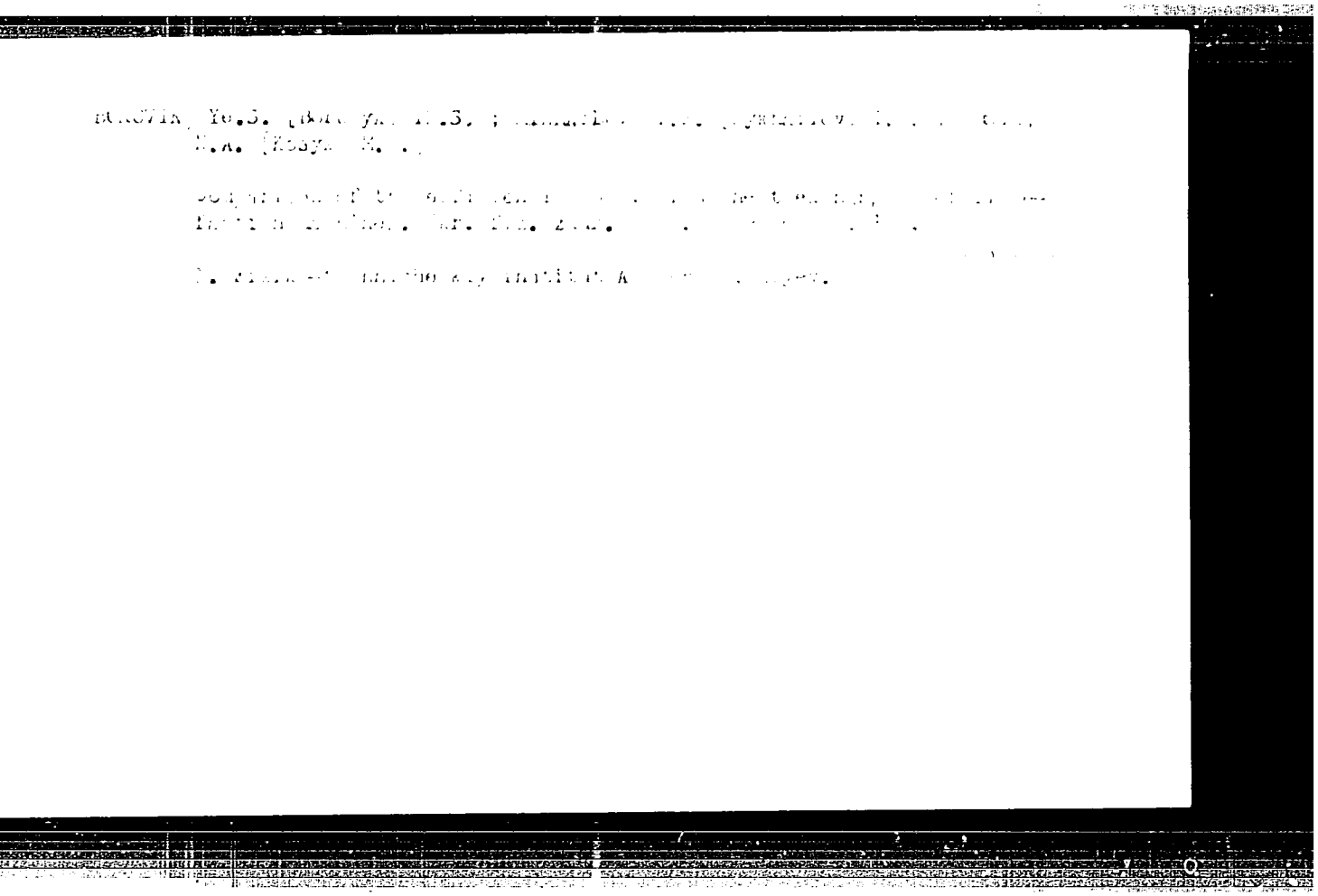
L 8393-65
ACCESSION NR: AP4048727

ASSOCIATION: Fizy*ko-tekhnichny*y insty*tut AN URSR, Kharkiv (Physico-Technological Institute, AN URSR)

SUBMITTED: 18Nov63 ENCL: 00 SUB CODE: TD

NO REF SOV: 005 OTHER: 002 JPRS

Card 2/2



PAVLOVSKIY, Ye.N., akademik [deceased]; MIKHAYLOV, [illegible].F.; YABLOKOVA, T.B.

Reviews. Zhur. mikrobiol., epid. i immun. 42 no.8:152-153 Ag '65. (MIRA 18:9)

1. Direktor Gosudarstvennogo kontrol'nogo instituta meditsinskikh biologicheskikh preparatov imeni L.A.Tarasevicha (for Mikhaylov). 2. Zaveduyushchaya laboratoriyey protivotuberkuleznykh preparatov Gosudarstvennogo konstrol'nogo instituta meditsinskikh biologicheskikh preparatov imeni L.A.Tarasevicha (for Yablokova).

L 8383-65 EWT(l)/EWT(m)/EPF(c)/EPF(n)-2/EPR/T/EPA(bb)-2/EWA(l) Pr-4/Ps-4/Pu-4
ASD(f)/BSD/SSD/AS(mp)-2/AEDC(a)/AFWL/ASD(d) JD/WW/GM
ACCESSION NR: AP4048728 S/0185/64/009/007/0759/0765

AUTHOR: Borovy*k, Ye. S. (Borovik, Ye. S.); [redacted] (Mikhaylov, I. F.); Kosy*k, M. A. (Kosik, N. A.)

TITLE: A comparison of the efficiencies of various heat exchangers for liquefication machines

SOURCE: Ukrayins'ky*y fizy*chny*y zhurnal, v. 9, no. 7, 1964, 759-765

TOPIC TAGS: heat transfer, heat exchanger, liquefication thermodynamics

Abstract: Efficiencies of various designs of heat exchangers are compared, and the advantages of the heat exchangers designed by the authors -- heat contact soldered tubes of different diameters in which each gas stream goes through one tube -- are demonstrated on the basis of several concrete examples.

Card 1/2

L 8383-65

ACCESSION NR: AP4048728

ASSOCIATION: Fizy*ko-tekhnichny*y insty*tut AN URSR, Kharkiv (Physico-Technological Institute, AN URSR)

SUBMITTED: 08Nov63 ENCL: 00 SUB CODE: TD

NO REF SOV: 007 OTHER: 003 JPRS

Card 2/2

MIKHAYLOV, I. F.

MIKHAYLOV, I. F. -- "Immunization Against Tularemia With Orally Administered Live Tularemia Vaccine (Under Experimental Conditions)." Sub 12 May 52 Second Moscow State Medical Inst imeni I. V. Stalin. (Dissertation for the Degree of Candidate in Medical Sciences.)

So: Vechernaya Moskva January-December 1952

"Comparative Evaluation of Bismuth-Sulfite Media for the Cultivation of Typhoid Fever Bacillus," by I. O. Dashkevich, T. F. Mikhaylov, and A. L Yaroslavtsev, Military-Medical Academy imeni S. M. Kirov, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, Mar 57, pp 78-81

Three media for the isolation of typhoid fever and paratyphoid bacteria from polluted water are compared for their effectiveness: (a) the original Wilson and Blair medium (1927); (b) the Minkevich medium which differs from the original by the addition of the culture medium components to a meat-peptone agar and by its use in unboiled form. (c) a medium prepared according to instructions by Ivanov, Ploskiryev, and Bitkova, containing all the components in suspension form.

The media were studied in agar and bouillon form.

The authors' conclusions are that:

1. The bismuth-sulfite medium prepared according to the original instructions of Wilson and Blair and according to Minkevich is most effective.

2. Growing of the typhoid fever bacilli on the bismuth-sulfite medium with limited access to oxygen gives the best sulfite reducing reaction accompanied by the appearance of a black coloration.

3. The bismuth sulfite formed as a result of the addition of bismuth citrate to the microbial mixture inhibits the respiration of intestinal bacilli in the stage of pyrotartaric acid oxidation.

4. Changes in the concentration of SO_3 ions in the medium cannot be utilized in the diagnosis of typhoid bacilli, because a decrease in the number of ions takes place due to both the growth of these microorganisms and to that of B. coli. (U)

DASHKEVICH, I.O.; MIKHAYLOV, I.F.

Preparation and testing of fluorescent immune sera. Zhur.mikrobiol. epid. i immun. 28 no.6:66-73 Je '57. (MIRA 10:1)

1. Iz kafedr biologicheskoy khimii i mikrobiologii Voyenno-meditsinskoy akademii imeni S.M.Kirova.

(IMMUNE SERUMS,
fluorescent serums, prep. & study (Rus))

MIKHAILOV, I.F.

Review of volume 32 of "Experience of Soviet medicine in the Great Patriotic War of 1941-1945." Zhur.mikrobiol.epid. i immun. 28 no.8: 135-138 Ag '57. (MIRA 11:2)
(WORLD WAR, 1939-1945--MEDICAL AND SANITARY AFFAIRS)
(COMMUNICABLE DISEASES)

MIKHAYLOV I F

EXCERPTA MEDICA Sec 4 Vol 12/11 Med. Micro. Nov 59

3559. THE POSSIBILITY OF EMPLOYING FLUORESCENT SERUMS IN BACTERIOLOGICAL DIAGNOSIS OF PATHOGENIC MICROORGANISMS OF THE INTESTINAL GROUP - Mikhailov I F and Li-li - ZH MIKROB. EPID. I IMMUNOBIOL. 1958. 12 (10-14) Tables 2 Illus 9

Antityphoid and antidysenteric γ-globulin was obtained from rabbits. Conjugations were made according to Coons with isocyanate of fluorescein. Conjugate of antityphoid γ-globulin contained 5.5 μg. of fluorescein in 1 mg. of protein and antibody titre was 1: 1600. Conjugate of antidysenteric γ-globulin contained 3 7 μg. of fluorescein in 1 mg. of protein and antibody titre was 1:2800. Luminescent microscopy employing specific fluorescent sera is a quick diagnostic procedure.

Tarabčák - Košice

MIKHAYLOV, I.F.

Possibility of using the fluorescent sera method. Zhur. mikrobiol. epid. i immun. 29 no.8:122-126 Ag '58. (MIRA 11:10)

(IMMUNE SERUM,
labeled by fluorescent substances, review (Rus))
(FLUORESCENCE,
labeled immune sera, review (Rus))

MIKHAYLOV, I.F.; LI LI

Detection of Vibrio comma in objects in the external environment with the aid of fluorescence sera. Zhur.mikrobiol.epid.i immun. 30 no.8:27-34 Ag '59. (MIRA 12:11)
(VIBRIO)
(IMMUNE SERUMS)

ROGOZIN, I.I.; MIKHAYLOV, I.F.

Achievements in epidemiology in the Chinese People's Republic. Zhur. mikrobiol.epid.i immun. 30 no.10:3-8 O '59. (MIRA 13:2)

1. Iz Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.
(EPIDEMIOLOGY)

MIKHAYLOV, I.F.; LI LI

Variations of the method of fluorescent sera. Zhur.mikrobiol. epid. i immun. 31 no.3:9-13 Mr '60. (MIRA 14:6)
(SERUM) (FLUORESCEIN) (STAINS AND STAINING (MICROSCOPY))

SINITSKIY, A.A.; D'YAKOV, S.I.; MIKHAYLOV, I.F.; NIKITIN, V.M.; OSIPOVA, I.V.

Use of an indirect method for staining P. pestis with fluorescent antibodies. Report No.1:Specificity of staining and morphological characteristics of plague vaccine cells. Zhur.mikrobiol.epid.i immun. 31 no.11:35-39 N '60. (MIRA 14:6)

1. Iz Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.
(PLAGUE) (VACCINES) (ANTIGENS AND ANTIBODIES)

MIKHAYLOV, Ivan Fedorovich; D'YAKOV, Sergey Ivanovich. Prinimali uchastiye: DASHKEVICH, I.O.; YERMAKOV, N.V.; IVANOVA, M.T.; LI LI; OSIPOVA, I.V.; MAYBORODA, G.M.; USPENSKIY, V.I., red.; ZUYEVA, N.K., tekhn. red.

[Fluorescence microscopy; application in medical microbiology] Liuminestsentnaia mikroskopiia; primenenie v meditsinskoi mikrobiologii. Moskva, Medgiz, 1961. 222 p. (MIRA 15:1)
(FLUORESCENCE MICROSCOPY) (MICROBIOLOGY)